

Supplementary Information for

**Petrogenesis of the Chang'E-5 mare basalts: Clues from the trace
elements in plagioclase**

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Supplementary Materials include:

1. Supplementary figures
2. Supplementary tables

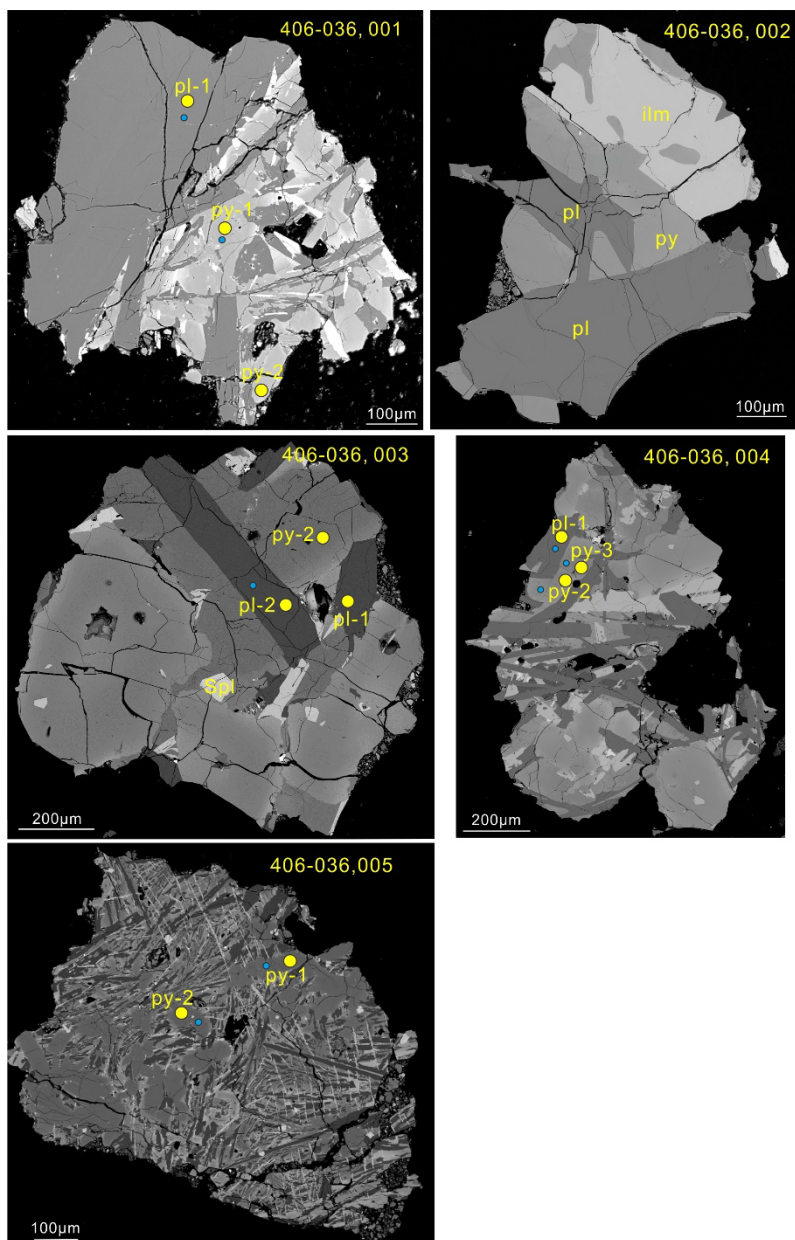


Figure OM1. Backscattered electron images of the Chang'E-5 basalts (406-036,001; 406-036,002; 406-036,003; 406-036,004; 406-036,005). The yellow and blue circles represent the LA-ICP-MS spots and Raman spots, respectively. Pl, plagioclase; Py, pyroxene; Spl, spinel; Ilm, ilmenite.

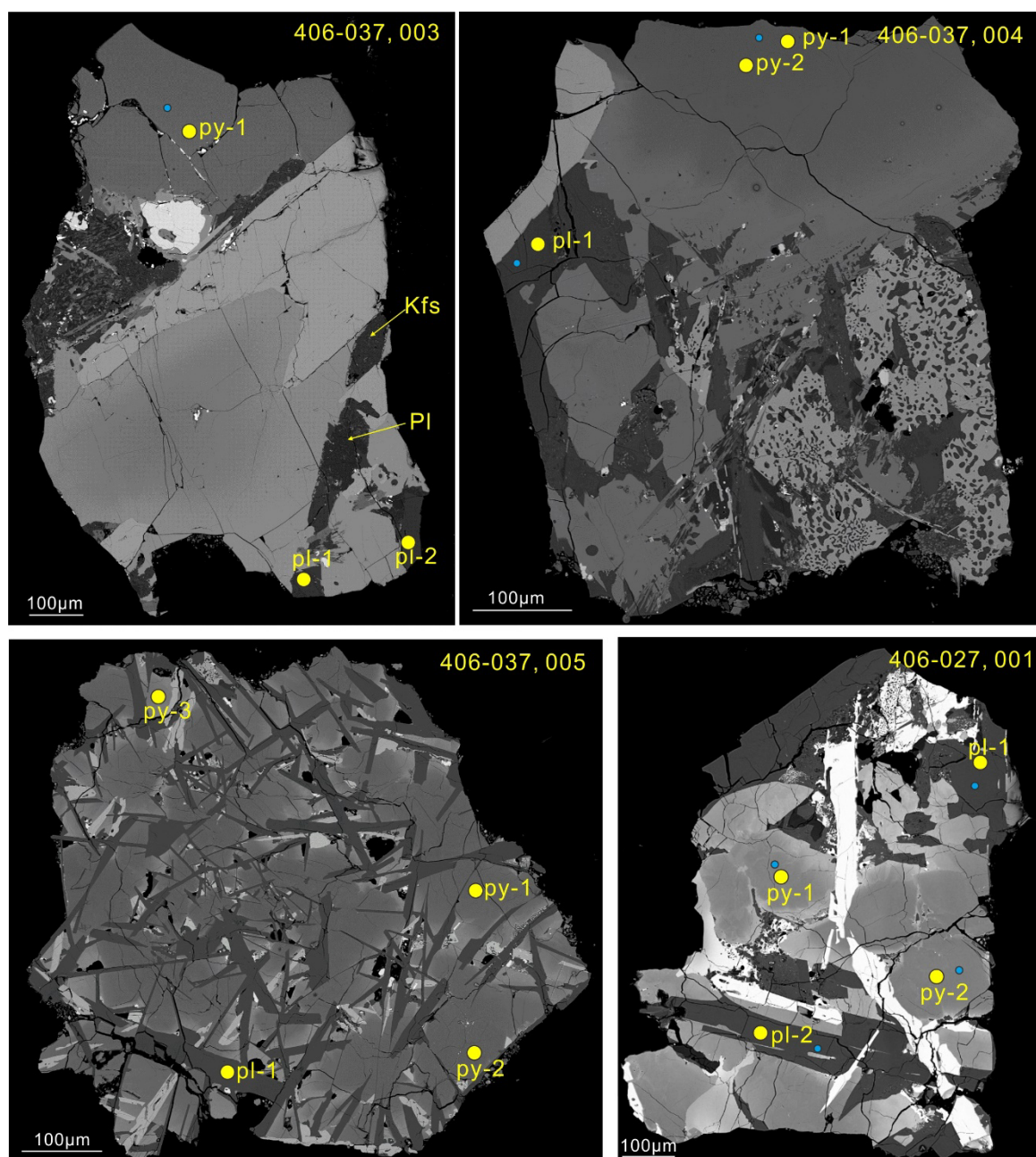


Figure OM2. Backscattered electron images of the Chang'E-5 basalts (406-037,003; 406-037,004; 406-037,005; 406-027,001). The yellow and blue circles represent the LA-ICP-MS spots and Raman spots, respectively. The concentrations of major elements in pyroxene and plagioclase in sample 406-027,001 was reported by Tian et al. (2021). Pl, plagioclase; Py, pyroxene; Kfs, K-feldspar.

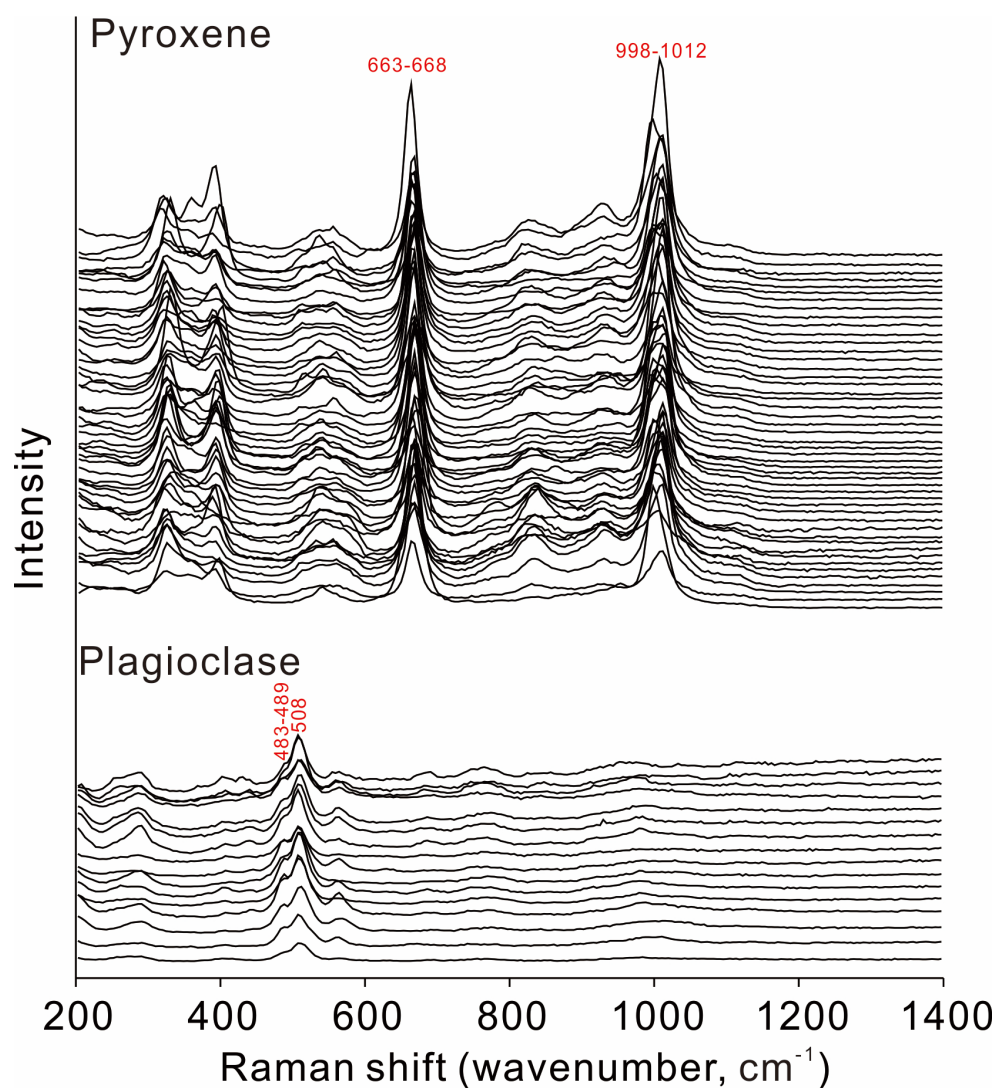


Figure OM3. The pyroxene and plagioclase grains that have been measured for trace elements in an earlier work (Tian et al., 2021) are used for Raman analysis in this work. Our original goal is to examine whether these minerals analyzed were affected by impact processes. The results are provided in the plots, and the analyzed spot locations are not shown.

References for supplementary material

Tian, H.C., Wang, H., Chen, Y., Yang, W., Zhou, Q., Zhang, C., Lin, H.L., Huang, C., Wu, S.T., Jia, L.H., Xu, L., Zhang, D., Li, X.G., Chang, R., Yang, Y.H., Xie, L.W., Zhang, D.P., Zhang, G.L., Yang, S.H., Wu, F.Y., 2021. Non-KREEP origin for Chang'e-5 basalts in the Procellarum KREEP Terrane. *Nature* 600, 59-63.

Table OM1. The chemical compositions of plagioclase and K-feldspar from Chang'E-5 basaltic clasts acquired by EPMA

Table OM2. The major and trace element concentrations of two standards analyzed by LA-ICP-MS

Table OM3. The major and trace element concentrations of pyroxene from Chang'E-5 basaltic clasts acquired by LA-ICP-MS

Table OM4. The major and trace element concentrations of plagioclase from Chang'E-5 basaltic clasts acquired by LA-ICP-MS

Table OM5. The parental trace element concentrations estimated from plagioclase grains from Chang'E-5 basalts